

**Draft Environmental Assessment/Initial Study  
and Proposed Negative Declaration**

**for the**

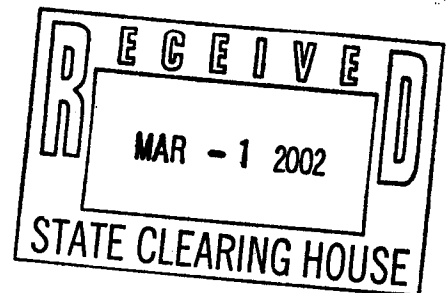
**2002 Water Purchase Agreement by the California Department of Water  
Resources and U.S. Bureau of Reclamation with the Kern County Water  
Agency for the CALFED Bay-Delta Program's Environmental Water  
Account**

(Pursuant to CEQA Guidelines Section 15152 and 40 C.F.R. 1502.20 and 1508.28, this  
document is tiered from the CALFED Final Programmatic EIS/EIR)

**State of California  
The Resources Agency  
DEPARTMENT OF WATER RESOURCES**

**U.S. Department of the Interior  
BUREAU OF RECLAMATION  
Mid-Pacific Regional Office**

**1 March 2002**



**State of California  
The Resources Agency  
DEPARTMENT OF WATER RESOURCES**

**PROPOSED NEGATIVE DECLARATION**

**2002 Water Purchase Agreement by the California Department of Water Resources  
and U.S. Bureau of Reclamation with the Kern County Water Agency for the  
CALFED Bay-Delta Program's Environmental Water Account**

**Project Description:** The California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (USBR), collectively referred to as the Lead Agencies, propose to purchase water supplied by the Kern County Water Agency (KCWA) in 2002 upon completion of an agreement between the Lead Agencies and KCWA. The amount to be purchased, up to 185,000 acre-feet, would depend upon KCWA's 2002 SWP allocation. The water would come from existing stored water accounts managed by KCWA in several groundwater banks. The water was banked by KCWA during periods when the quantity of available supplies with respect to demand created a surplus. Recovery of the purchased water would be by delivery into O'Neill Forebay through SWP entitlement exchange and/or direct pump-in to the California Aqueduct in Kern County. The DWR and USBR would provide the water to the CALFED Environmental Water Account (EWA) for use in 2002. No new facilities or new water supplies would be constructed or created under this project. This project would not cause any alteration in SWP or CVP scheduling, operation, or supplies that would negatively impact other State or Federal water contractors or any other water users.

**The Finding:** The proposed project will not have a significant negative impact on the environment.

**Basis for Finding:** Only existing facilities operating within their current regulatory parameters and guidelines will be utilized in the proposed project. KCWA will ensure that it has adequate water supply and capacity to meet local contracted demands while EWA water is being transferred. The water levels in San Luis Reservoir, O'Neill Forebay, the California Aqueduct, and the Kern County Groundwater Basin will remain within normal operational levels so that adverse environmental effects to groundwater, soils, recreation,

geology, power use, water supply, biological resources, and other aspects of the human environment will not occur.

Therefore, this Negative Declaration is filed pursuant to Section 15070 et seq. of the California Code of Regulations (CEQA Guidelines) for Implementation of the California Environmental Quality Act.

The public review period for this Negative Declaration and Environmental Assessment/Initial Study will end 1 April 2002. All comments or questions should be directed to DWR Delores Brown, 3251 "S" Street, Sacramento, CA 95816-7017 (916/227-2407 and fax 916/227-7554). Copies of the Initial Study/Environmental Assessment are available at the above address or by request.



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Chief, Environmental Services Office  
California Department of Water Resources

Date 3/1/02

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## **Environmental Assessment/Initial Study**

### **2002 Water Purchase Agreement by the California Department of Water Resources and U.S. Bureau of Reclamation with the Kern County Water Agency for the CALFED Bay-Delta Program's Environmental Water Account**

#### **1. PURPOSE AND NEED FOR ACTION**

The U.S. Bureau of Reclamation (USBR) and the California Department of Water Resources (DWR) propose to purchase stored water from the Kern County Water Agency (KCWA). USBR and DWR are the lead Federal and State agencies, respectively, and will be referred to as the Lead Agencies. KCWA manages several water banks and is a wholesale distributor of water to various districts within Kern County. Under the Proposed Action analyzed in this Environmental Assessment/Initial Study (EA/IS), KCWA would sell a portion of their existing banked groundwater accounts to the Lead Agencies for use in the CALFED Bay-Delta Program's Environmental Water Account Program (EWA).

##### **1.1. Objectives of the Action**

The following acquisition needs and operational, regulatory, and environmental goals provided the basis for evaluating alternative water purchase actions in this EA/IS.

- Obtain EWA assets from sources south of the Sacramento-San Joaquin River Delta.
- Acquire water early in the year to ensure functionality of the EWA and fulfillment of the Endangered Species Act (ESA) commitments of the CALFED August 28, 2000 Record of Decision.
- Have flexibility in delivery options. Water sellers must be able to provide delivery into O'Neill Forebay through an exchange of SWP entitlement and/or provide delivery by direct pump-in to the California Aqueduct.
- Acquire water assets in the most economical and feasible way through large, single contract water purchases from sources that have demonstrated that water transactions would not significantly affect local water needs.
- Water acquisitions should meet all EWA goals described in the CALFED Final Programmatic Environmental Impact Statement/Environmental Impact Report (Programmatic EIR/EIS) and ROD (see Section 1.2.2 for these goals).
- Water acquisitions must comply with all existing water purchase plans and policies (discussed in Section 1.2.3).

## **1.2. Other Pertinent Studies and Documents**

The California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) provide for tiering of environmental documents. This EA/IS tiers from the CALFED Final Programmatic Environmental Impact Statement/Environmental Impact Report (Programmatic EIS/EIR) including the Programmatic Record of Decision issued August 28, 2000. These are available for review at the CALFED website: <http://calfed.ca.gov/> or through the California State Library system. This EA/IS also references the Final EIR for the Artificial Recharge, Storage, and Overdraft Correction Program, Kern County California (Kern Water Bank EIR)<sup>1</sup> which is available for inspection at 3251 'S' Street Sacramento, California 95815 or through the California State Library system. This EA/IS incorporates by reference the information, analyses, conclusions, and agreements contained in the aforementioned documents in their entirety.

Specific links between this EA/IS and the CALFED Programmatic EIS/EIR include the analysis of the CALFED Environmental Water Account (EWA) program, found in Section 5.1 (Water Supply and Management), Section 5.2 (Bay-Delta Hydrodynamics and Riverine Hydraulics), Attachment A (Modeling Assumptions), and select Programmatic EIS/EIR Technical Appendices (Phase II Report, Implementation Plan, Water Transfer Program Plan, and the Multi-Species Conservation Strategy Plan), as well as Attachment 2 (Environmental Water Account Operating Principles Agreement), Attachment 3 (Implementation Memorandum of Understanding), Attachment 5 (Conservation Agreement Regarding Multi-Species Conservation Strategy), Attachment 6A (Programmatic Endangered Species Act Section 7 Biological Opinions of the U.S. Fish and Wildlife Service), Attachment 6B (Programmatic Endangered Species Act Section 7 Biological Opinion of the National Marine Fisheries Service), Attachment 7 (Natural Community Conservation Plan Determination), and Attachment 9 (Coastal Zone Management Act Programmatic Consistency Determination) of the CALFED Programmatic ROD. Elements of particular pertinence in Kern Water Bank EIR include Chapters 2 (project description), 3 (environmental setting), and 4 (environmental effects and mitigation).

### **1.2.1. CALFED Programmatic EIS/EIR and Record of Decision**

The CALFED Bay-Delta Program's purpose is to restore the ecological health of, and improve water management for beneficial uses in, the San Francisco Bay/Sacramento-San Joaquin River Delta estuary system through a long-term, comprehensive plan. The CALFED Programmatic EIS/EIR presented the general environmental consequences of the long-term plan. The final long-term plan is identified and explained in the August 28, 2000 ROD. To achieve its purpose, the CALFED agencies will concurrently and comprehensively address the problems of the Bay-Delta system within each of four resource categories: ecosystem quality, water quality, water supply reliability, and levee system integrity. The CALFED agencies identified additional fisheries protection measures to speed the recovery of fish species listed under the California and Federal Endangered Species Acts. One such measure was the creation and implementation of an Environmental Water Account (EWA).

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<sup>1</sup> California Department of Water Resources (1986)



### **1.2.2. Environmental Water Account**

The Environmental Water Account (EWA) is a cooperative management program implemented by five CALFED agencies<sup>2</sup>. The purpose of EWA is to promote flexible water project management to provide additional protection and recovery of fisheries in the San Francisco Bay/Sacramento-San Joaquin Delta, and to better ensure reliable water deliveries to CVP and SWP water users. USBR and DWR, as the EWA Project Agencies, are responsible for acquiring at least 185,000 acre-feet of water on behalf of EWA in 2002. USBR and DWR are also responsible for administering the EWA in cooperation with the EWA Management Agencies (U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game).

The EWA will be in effect for the first four years of Stage 1<sup>3</sup> of the CALFED Bay-Delta Program. The CALFED ROD, as well as Appendices A and B<sup>4</sup> of this EA/IS provide details of the four-year EWA program, including existing EWA operational conditions. Additionally, operational conditions of the overall EWA program are discussed in Appendix 2 of the CALFED ROD (the EWA Operating Principles). Overall EWA operational effects on Delta fisheries are discussed in the Multi-Species Conservation Strategy and Appendix 6b of the CALFED ROD.

During 2000/2001, DWR used State funds and State facilities to purchase water and other assets such as storage opportunities to create an operable EWA. In 2002, EWA will require new water assets (Appendix B). USBR and DWR will use Federal and State funds to acquire new EWA assets and will prepare NEPA and/or CEQA documents for these acquisition actions.

### **1.2.3. Consistency with Other Plans and Policies**

Alternatives presented in this EA/IS will comply with all CALFED and Sacramento-San Joaquin River Delta agreements and regulations, and with KCWA service area's local plans and policies. This EA/IS incorporates the following documents by reference:

#### Sacramento-San Joaquin Bay-Delta Regulations

- Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Decision 1641 by the State Water Resources Control Board 1999)
- Central Valley Project Improvement Act (1992)

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<sup>2</sup> California Department of Fish and Game, California Department of Water Resources, National Marine Fisheries Service, U.S. Bureau of Reclamation, and U.S. Fish and Wildlife Service

<sup>3</sup> Stage 1 implementation covers the first seven years of implementation of the CALFED 30-year program and builds the foundation for long-term actions. The Stage 1 actions to implement the Preferred Program Alternative are described in the CALFED Record of Decision. These actions are dependent upon subsequent project-specific environmental analyses as well as on subsequent review of financial and legislative proposals by the State and Federal executive branches, Congress and the State Legislature.

<sup>4</sup> Appendix A contains an overview of the four year EWA program. Appendix B contains an overview of EWA in 2002.

#### Coordination Operations Agreement (1986)

- The EWA Project Agencies shall continue to adhere to the general sharing principles contained in the 1986 agreement between the United States and California for coordinated operation (COA) of the CVP and SWP as modified by interim operating agreements to reflect changes in regulatory standards, facilities, and operating conditions, including the EWA.

#### U.S. Endangered Species Act and California Endangered Species Act

- Biological Opinion for the operation of the Federal Central Valley Project and State Water Project, Winter-run Chinook Salmon (National Marine Fisheries Service 1993)
- Formal Consultation and Conference on Effects of Long-Term Operation of the Central Valley Project and California State Water Project on the Threatened Delta Smelt, Delta Smelt Critical Habitat, and Proposed Threatened Sacramento Splittail (U.S. Fish and Wildlife Service 1995)

#### CALFED Environmental Compliance Agreements

- Clean Water Act Section 404 MOU
- Conservation Agreement Regarding Multi-Species Conservation Strategy
- Clean Water Act Section 401 agreement

### **1.3. NEPA/CEQA Compliance**

The CALFED Programmatic EIS/EIR and the ROD specify that the EWA Management Agencies and EWA Project Agencies should evaluate the acquisition and use of EWA assets by any of the following types of environmental documents: Initial Studies, Environmental Assessments, Environmental Impact Reports, Environmental Impact Statements, Categorical Exemptions, and Categorical Exclusions. The Management and Project Agencies are preparing an EIS/EIR to assess the overall four-year EWA program and its implementation. This EA/IS evaluates only a short-term (one-year) action that enables the Lead Agencies to acquire water for the EWA in order to meet CALFED ecosystem quality commitments for fish protection, restoration, and recovery in 2002.

This joint EA/IS evaluates a proposed 2002 water purchase by the Lead Agencies. The preparation of this EA/IS complies with all the provisions of NEPA and CEQA, and other Federal and State guidelines. The purpose of this EA/IS is to provide USBR and DWR decision makers, public agencies, and the general public with an objective and comprehensive document that fully discloses any environmental consequences (potential impacts) that might be caused by the action, or caused by any mitigation included in the proposed action. This document and the CEQA and NEPA process associated with this document will provide an opportunity for public input, thereby providing a foundation for an informed and prudent decision by the DWR and USBR decision makers. After considering the information included in this draft EA/IS and any comments submitted by State and Federal agencies or by the public, USBR and DWR decision makers will choose to implement either the Proposed Action Alternative (the purchase of up to 185,000 acre-feet of banked groundwater from the KCWA) or the No Action Alternative.

In preparing this EA/IS, the Lead Agencies considered the impacts analysis in the CALFED Programmatic EIS/EIR and the Kern Water Bank EIR, and identified issues

and environmental resources requiring specific evaluation for the action proposed in this EA/IS. The Lead Agencies have evaluated the alternatives in light of the conclusions reached in the Programmatic EIS/EIR and Kern Water Bank EIR that are relevant to the proposed project and EWA. Because the action proposed here is short-term and has independent utility, the action would not prejudice any final determinations on the EWA as a whole or limit any decisions that may be made in the forthcoming EIS/EIR that will assess the overall long-term EWA program and its implementation.

#### **1.4. Authorization for the Proposed Action**

Both USBR and DWR are CALFED signatory and participating agencies, and agreed to provide agency support for implementation of CALFED programs such as EWA. Current state funding for EWA purposes is through California Proposition 204. The USBR is authorized to acquire water for EWA purposes through the Central Valley Project Improvement Act (CVPIA) Section 3406 (b(3)).

## **2. ALTERNATIVES**

### **2.1. Alternatives Considered and the Rationale for the Selection of Alternatives Analyzed in this EA/IS**

This EA/IS considers two alternatives, the Proposed Action Alternative and the No Action Alternative. The KCWA water purchase described in the Proposed Action Alternative is a readily available and known opportunity for the Lead Agencies to expeditiously acquire water for the 2002 EWA program. At the time of writing of this EA/IS, DWR and USBR are not aware of other potential water acquisitions that would meet each of the study objectives specified in Section 1.1.1. Given the constantly changing water marketplace in California and the uncertainty early in the year over available water supplies, it is difficult to predict when, from whom, and in what quantities other water will become available for acquisition by the Lead Agencies in 2002. Any additional alternatives that might be formulated at this time would be highly speculative and likely inaccurate. EWA's ability to acquire water is dependent on willing sellers. Likewise, this proposed water purchase has independent utility, and could be used by KCWA for other purposes or sold to another party. If this NEPA/CEQA process were delayed to develop less speculative additional alternatives, the Lead Agencies could lose the opportunity to obtain this water from KCWA.

The opportunistic nature of this water purchase from KCWA has limited the range of reasonable alternatives that could be developed for this EA/IS. The Proposed Action Alternative and the No Action Alternative are the only practicable and reasonable alternatives available at this point in time. Therefore, the two alternatives in this EA/IS fully comply with 40 C.F.R. 1502.14 and CEQA Guidelines 15126.6(e)(3) for alternative formulation. Of the two alternatives analyzed in this EA/IS, The Proposed Action Alternative is the only alternative that fulfills all objectives discussed in Section 1.1.1, therefore, the Proposed Action Alternative was identified as the preferred alternative by the Lead Agencies.

## **2.2. Proposed Action (Proposed Project) Alternative**

The Lead Agencies propose to purchase water from KCWA (Figure 1). This water is surplus water that was previously banked by KCWA and cooperating local water districts. The water to be purchased is in existing accounts held by the Kern Water Bank, Pioneer Groundwater Recharge and Recovery Project (Pioneer Project), Berrenda Mesa Project, and the Buena Vista Water Service District, collectively referred to as KCWA groundwater banks (Figure 2). KCWA, which manages these water projects and is a wholesale distributor of water to the Buena Vista Water Service District, would enter into the purchase agreement and deliver the purchased water to the Lead Agencies.

The Lead Agencies would purchase between 50,000 and 185,000 acre-feet of water from KCWA for EWA purposes. The amount of water that would be purchased as part of the Proposed Project Alternative is dependent upon KCWA's 2002 SWP allocation. As 2002 SWP allocation increases, more water would be made available by KCWA for purchase by the Lead Agencies. If 2002 SWP delivery allocations reach 100%, KCWA would provide up to 185,000 acre-feet of water for purchase.

KCWA would transfer the purchased water to the Lead Agencies using one or both of two possible delivery methods. In the first delivery method, KCWA would make the water available through SWP entitlement exchange. KCWA would exchange between 50,000 and 185,000 acre-feet of their 2002 SWP water entitlement for the water purchased in the Proposed Action. In this circumstance, KCWA would pump the purchased groundwater, and use it in lieu of SWP entitlement water to satisfy local water commitments depending upon user demands and 2002 surface water supplies. The exchanged SWP water would then be delivered to the O'Neill Forebay and San Luis Reservoir using existing SWP infrastructure and the CVP's or SWP's Delta pumping-plants (Figure 3). The Lead Agencies would store the water in San Luis Reservoir as EWA assets.

In the second delivery method, KCWA would pump the purchased water (between 50,000 and 185,000 acre-feet), and deliver the water to the SWP through direct pump-in to the California Aqueduct using one or more of the existing facilities in Kern County (Figure 2). In this case, an equal amount of SWP water would be held in O'Neill Forebay or San Luis Reservoir as 2002 EWA assets. The pumped-in water would then be used to satisfy SWP obligations in service areas downstream of the pump-in points. Only existing SWP, CVP, and KCWA facilities would be used for the delivery of pumped-in water and all water quality regulations and SWP requirements for pump-in would be followed.

Exchanged water would be delivered to O'Neill Forebay and San Luis Reservoir in a manner consistent with all State and Federal regulatory requirements, SWP and CVP guidelines, the Coordination Operations Agreement, and the EWA Operating Principles (Attachment 2 of the CALFED ROD). The amount of water recovered by KCWA from its groundwater banks would be within normal KCWA water bank operations, and would follow all regulatory requirements. Furthermore, KCWA would provide the Lead Agencies with documentation indicating how, and in what quantities, the banked water was used. No new facilities would be constructed under the Proposed Action.

### **2.3. No Action (No Project) Alternative**

Under the No Action alternative, the Lead Agencies would not purchase banked groundwater from KCWA for use in the 2002 EWA program. KCWA would not pump water for sale to the Lead Agencies for this purpose. Water would not be delivered into the O'Neill Forebay by exchange of SWP entitlement, nor would water from KCWA be delivered by direct pump-in to the California Aqueduct.

The No Action alternative does not impact or change any CALFED or EWA commitments in the ROD. If the Lead Agencies' decision makers select the No Action Alternative at the conclusion of this NEPA/CEQA process, the EWA would identify and purchase water from other source(s) north and south of the Delta to satisfy the EWA 2002 target quantity of 185,000 acre-feet, as specified in the ROD. Therefore, the No Action Alternative would not change the operation of the EWA program relative to the current operating conditions. As explained in Section 2.1, this EA/IS cannot predict when, from whom, or in what quantities the Lead Agencies might acquire other water in 2002.

Although other EWA water purchases are expected in 2002, the No Action Alternative does not directly or indirectly cause other water purchases to take place. Therefore, the No Action Alternative's project description does not describe other possible EWA water purchases which may or may not occur in 2002, and no additional water purchases were included in the No Action Alternative's impact analysis presented in Chapter 3.

## **3. AFFECTED ENVIRONMENT (ENVIRONMENTAL SETTING) AND ENVIRONMENTAL CONSEQUENCES (ENVIRONMENTAL IMPACTS)**

### **3.1. Introduction**

The existing environment (also called the affected environment or environmental setting) of the project area is presented in Chapter 3, as well as an analysis of the potential environmental effects or consequences of both the Proposed Project and No Action Alternatives. The following categories were used in this EA/IS to evaluate the potential effects (expected impacts) of each alternative discussed in this EA/IS:

A finding of "no effect" would cause no change to the specific environmental resource being analyzed; a "less-than significant effect" would cause some change to the resource, but the change was determined to be minimal, and no substantial adverse or negative change in the resource would result.

Conversely, a finding of "significant effect" would be one that causes a substantial adverse or negative change in the environmental resource. A "significant effect" assessment would require the addition of specific mitigation measures to reduce the effect to a level of "less-than-significant". The criteria used in this EA/IS to determine if a potential adverse effect is "significant" are those criteria listed in the CEQA Guidelines. Potentially beneficial effects, defined as potential positive changes in the environment,

are identified in the text if appropriate, but are not shown on the Environmental Checklist (Appendix C).

Under Section 15125(a) of CEQA, the level of significance is typically determined by comparing the project's expected effect on a resource to the existing environmental conditions (the affected environment, or environmental setting) for that resource. Under NEPA, the environmental effects resulting from taking no action (the No Action Alternative) usually serve as the baseline from which to compare any potential effects. In this study, the environmental effects of taking no action are identical to the existing environmental conditions.

### **3.2. Resources Considered**

A checklist of environmental issues and resources that were considered is presented in Appendix C. The alternatives under consideration do not include new construction of water facilities, infrastructure, other construction actions, or land disturbance of any kind. Therefore, both alternatives would have no effect on surface or buried cultural resources, hazards and hazardous materials, mineral resources, noise, transportation/traffic, or utilities and service systems. Both alternatives would have no effect on water availability, and would not induce growth through creation of greater water supplies or additional availability. Therefore, neither alternative would affect land use and planning, population and housing, or public services. Consequently, the components of the environment listed above are not analyzed further in Chapter 3, pursuant to 40 CFR 1502.15.

The Lead Agencies determined that the proposed alternatives have some potential to affect these components of the human environment: water project infrastructure operation, energy use, air quality, agriculture, aesthetics, recreation, agriculture and socio-economics, soil, surface water, groundwater, water quality, and biological resources. Environmental justice and Indian trust assets were also considered. Although it may not occur, for this analysis it was assumed that the entire 185,000 acre-feet of water would be purchased, delivered, and recovered from the Kern groundwater banks under the Proposed Action alternative because this scenario would represent the largest potential effects to environmental resources. The effects of the No Action alternative and the Proposed Action alternative on environmental resources are presented below.

### **3.3. State and Federal Water Project Infrastructure**

#### **3.3.1. Existing Conditions**

The CVP, SWP, and KCWA currently operate using a variety of facilities throughout the state, especially the Central Valley. These facilities transport millions of acre-feet of water each year to substantial agricultural acreage and to over two-thirds of California's population. The major features of these water projects that would be used to implement the proposed alternatives are described below.

#### Kern County Water Agency and the Kern Water Bank

KCWA is the second largest SWP contractor (Figure 1). KCWA, along with other water agencies, belongs to a joint-powers authority for the purpose of owning and operating

various groundwater banks in Kern County (Figure 2). These groundwater banks have the ability to store and retrieve water, and deliver it into the SWP's California Aqueduct at several connections in Kern County. KCWA also serves as a water wholesaler and distributes water to the following thirteen local water districts:

- Belridge Water Storage District
- Berrenda Mesa Water District
- Buena Vista Water Storage District
- Cawelo Water District
- Henry Miller Water District
- Kern Delta Water Storage District
- Lost Hills Water District
- Rosedale Rio-Bravo Water Storage District
- Semitropic Irrigation District
- Tehachapi Cummings County Water District
- Tejon Castaic Water District
- West Kern Water District
- Wheeler Ridge-Maricopa Water Storage District

#### State Water Project (SWP)

The SWP includes 29 storage facilities, 18 pumping plants, 4 pumping-generating plants, 5 hydroelectric power plants and approximately 660 miles of canals and pipelines (Figure 3). Its main purpose is water supply; that is, to divert and store surplus water during wet periods and distribute it to areas of need in Northern California, the San Francisco Bay area, the San Joaquin Valley, the Central Coast, and Southern California. Other project purposes include flood control, power generation, recreation, fish and wildlife enhancement, and water quality improvement in the Sacramento-San Joaquin River Delta.

Twenty-nine urban and agricultural water agencies have long-term contracts for over 4 million acre-feet per year of water from the State Water Project. Figures 1 and 3 show contracting agencies and major State Water Project features, respectively.

#### Central Valley Project (CVP)

The CVP, managed by the USBR, provides water to 290 water contractors throughout Northern California, the Central Valley, and eastern regions of the greater San Francisco Bay area. The KCWA is one of these water contractors. The CVP consists of 20 storage reservoirs having the combined capacity to store 11 million acre-feet, 11 power plants, 500 miles of canals and aqueducts, three fish hatcheries, plus assorted tunnels, conduits, and power grids and distribution systems. The majority (85 percent) of CVP water is used for agricultural irrigation purposes; the remainder (15 percent) is for municipal and industrial users. In addition to providing water, CVP facilities provide other important benefits including flood protection, power production, water quality improvement, groundwater overdraft protection, environmental preservation, restoration for anadromous fish, wildlife refuges, instream flows, and salinity intrusion prevention. Annually, the CVP stores and distributes approximately 20 percent of the State's developed water (7 million acre-feet), and generates more than 5 billion kWh of energy.

### O'Neill Forebay

O'Neill Forebay is the forebay to the San Luis Reservoir and is located along the western side of the San Joaquin Valley in Merced County. O'Neill Forebay receives water from the California Aqueduct (Figure 3) to the north and from the Federal Delta-Mendota Canal to the east. It has a maximum operating storage volume of 56,430 acre-feet.

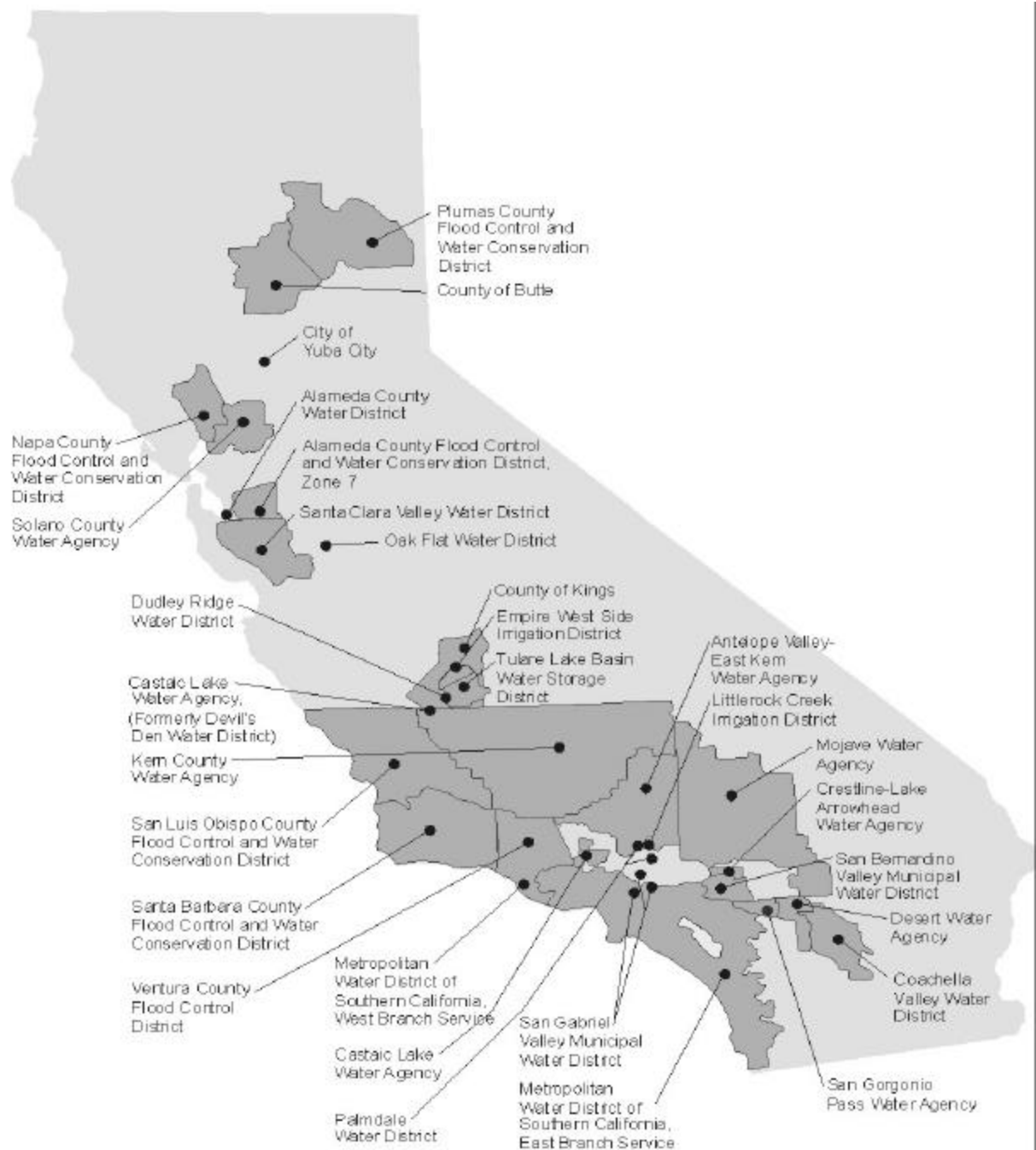
### San Luis Reservoir

San Luis Reservoir is located in the eastern foothills of the Diablo Mountain Range in central California (Figure 3). It is part of the State-Federal San Luis Joint-Use Complex, which includes O'Neill Forebay. The Reservoir holds water diverted from the Sacramento-San Joaquin River Delta for subsequent delivery to CVP and SWP contractors (Figure 1) in the San Joaquin Valley, Southern California, and the Federal San Felipe Project. San Luis Reservoir water is used to supplement supplies during periods of constrained operations in the Delta and when demands exceed the allowable or maximum capacity at State and Federal Delta pumps. San Luis Reservoir has a storage capacity of 2,028,000 acre-feet, of which the SWP and CVP are entitled to approximately one million acre-feet each.

### California Aqueduct

The California Aqueduct is the main conveyance facility of the SWP. It conveys water from the Banks Pumping Plant at Clifton Court Forebay in the southern portion of the Sacramento-San Joaquin River Delta to San Luis Reservoir and SWP water contractors located in the South Bay, San Joaquin Valley, and Southern California.





**Figure 1. State Water Contractors**

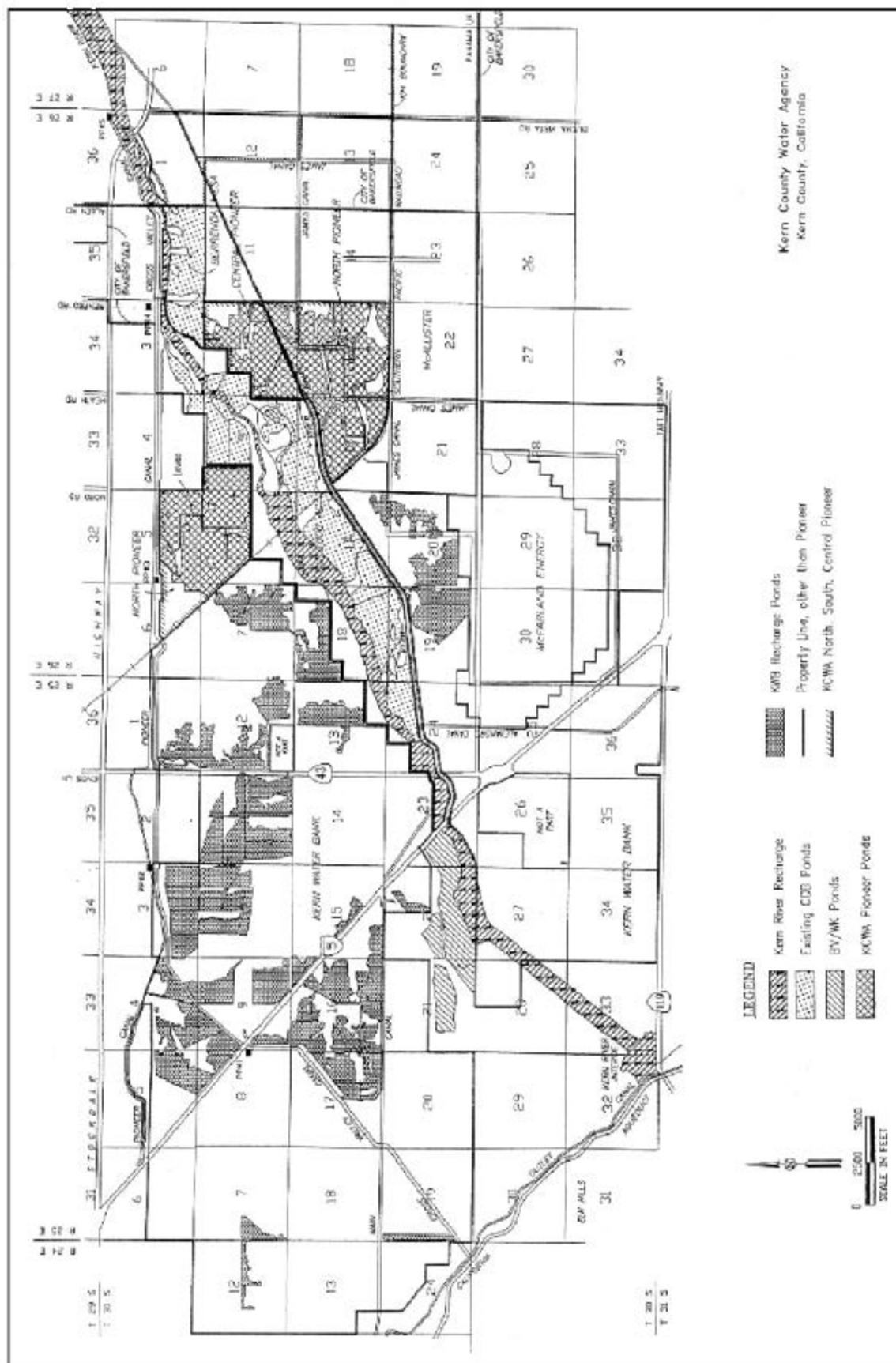


Figure 2. Kern County Water Agency groundwater recharge facilities



**Figure 3. State Water Project Features**

### **3.3.2. Environmental Consequences of Proposed Action**

The Proposed Action would have a small effect on the timing and delivery of EWA water to the O'Neill Forebay, San Luis Reservoir, and the California Aqueduct, resulting in minor operational adjustments of the SWP. Because the Proposed Action would only change the timing of the delivery of water but not the volume of water, the operational adjustments resulting from the Proposed Action are well within the range of normal operating conditions of these infrastructure components. In addition, the maximum amount of water that would be exchanged under the Proposed Action (185,000 acre-feet) is negligible when compared to the overall operations and annual water conveyance of these facilities. These facilities routinely transport several million acre-feet of water per year and are subject to large monthly operational fluctuations because of statewide water demands and hydrologic conditions. Therefore, the effect of the proposed action on the operation of the SWP would be less-than-significant.

O'Neill Forebay and San Luis Reservoir would be used to store the purchased water until the EWA agencies elect to use these assets. The storage of water from this proposed water purchase would not have a significant effect on water levels in the reservoir. Current SWP and CVP operations are governed by the COA (1986) and a series of regulations and agreements with SWRCB, USFWS, NMFS, and DFG as discussed in Section 1.2.3. The proposed project complies with all relevant regulations. Therefore, the effect of the purchase and recovery of up to 185,000 acre-feet of banked water on the existing SWP facilities would be less-than-significant.

### **3.3.3. Environmental Consequences of the No Action**

The No Action alternative would not involve the California Aqueduct at pump-in points in Kern County or any other component of the SWP. The No Action Alternative would have no effects on water project infrastructure.

## **3.4. Water Banks**

The proposed alternatives could only affect stored groundwater in KCWA's groundwater banks. Any other groundwater banks that might be used by the EWA program in 2002 are not associated with the proposed alternatives discussed in this EA/IS.

### **3.4.1. Existing Conditions**

KCWA receives mostly agricultural SWP entitlements but also some municipal and industrial SWP entitlements. KCWA owns and operates the Kern Water Bank, Pioneer Project (Figure 2), and the Berrenda Mesa Project, and other water banks. The Kern Water Bank and associated projects routinely recharge and extract water from the ground depending upon water demand and hydrologic conditions in California. Approximate descriptions of the KCWA groundwater banks involved in the Proposed Action are presented in Table 1.

**Table 1. Approximate description of KCWA groundwater banks included in the Proposed Action Alternative.**

<b>Facility Name</b>	<b>Gross Area (Acres)</b>	<b>Estimated Storage (AF)</b>	<b>Maximum Storage (AF)</b>	<b>Maximum Annual Recharge (AF)</b>	<b>Maximum Annual Recovery (AF)</b>
Buena Vista WSD	2,000	228,000	250,000	100,000	45,000
Berrenda Mesa Project	370	102,000	200,000	58,000	46,000
Pioneer Project	2,253	249,000	400,000	146,000	98,000
Kern Water Bank	19,900	870,000	1,000,000	450,000	287,000
<b>Total</b>	<b>24,523</b>	<b>1,449,000</b>	<b>1,850,000</b>	<b>754,000</b>	<b>476,000</b>

Note – Information provided by Kern County Water Agency, 2000

### **3.4.2. Environmental Consequences of the Proposed Action**

The Proposed Action would extract banked water from KCWA's groundwater banks. Under the Proposed Action, KCWA would extract a maximum of 185,000 acre-feet during the 2002 water year. KCWA would extract water using existing KCWA wells and pumps and would deliver to the Lead Agencies through either direct entitlement exchange in O'Neill Forebay or direct pump-in to the California Aqueduct. Activities required for pump-in and/or water delivery through entitlement exchange are within the normal operations of KCWA's groundwater banks. The potential maximum of 185,000 acre-feet of banked water that would be pumped and moved under the Proposed Action is well within the operational parameters of the KCWA groundwater banks' combined maximum annual recovery capability of over 476,000 acre-feet. Therefore, the proposed action would have a less-than-significant effect on the existing KCWA groundwater reserves or on KCWA infrastructure.

### **3.4.3. Environmental Consequences of the No Action**

Under the No Action alternative, KCWA would not pump up to 185,000 acre-feet of banked water from the KCWA groundwater banks as part of a purchase agreement with the Lead Agencies. The KCWA water banks would continue operations in their normal and intended manner. Therefore, the No Action alternative would have no effect on KCWA facilities.

## **3.5. Energy**

### **3.5.1. Existing Conditions**

The SWP operates 25 major pumping and generating plants to convey several million acre-feet of water annually. In 1998 SWP plants consumed 3.45 billion kWh, generated 5.92 billion kWh, and purchased or exchanged 4.43 billion kWh of energy (California Department of Water Resources 2001a). Major factors affecting power plant operation

are the required water releases for downstream habitat, electric system needs, and project-use demand.

Water users within Kern County often rely heavily on groundwater supplies during dry-year periods and the annual energy consumption by KCWA for groundwater pumping within Kern County can fluctuate greatly depending upon the amount of groundwater extracted in a particular year. Quantities of water routinely extracted by KCWA vary from 500,000 - 1,000,000 acre-feet during dry years.

### **3.5.2. Environmental Consequences of the Proposed Action**

Under the Proposed Action alternative, banked groundwater pumped by KCWA would be delivered to the Lead Agencies through an exchange of KCWA's SWP entitlement or direct pump-in to the California Aqueduct. Pumping of the purchased water would cause KCWA to consume electrical power, but the energy required to pump up to 185,000 acre-feet would be well within the range of normal KCWA operations and energy use.

The Proposed Action changes only the timing of water delivery to the SWP (see 3.3). Consequently, the Proposed Action does not increase water transfers, pumping, or increase overall SWP power use. Additionally, the energy required for delivery of 50,000 to 185,000 acre-feet of water into O'Neill Forebay would be insignificant relative to the total energy used annually by the SWP. Therefore, impacts to energy resources from the Proposed Action would be less-than-significant.

### **3.5.3. Environmental Consequences of the No Action**

Under the No Action alternative, no power would be used in Kern County or the SWP pumping stations in the Sacramento-San Joaquin River Delta to exchange KCWA entitlement. No power would be used at the KCWA water banks to recover water. Therefore, the No Action alternative would have no effect on power consumption.

## **3.6. Air Quality**

### **3.6.1. Existing Conditions**

All project locations discussed in Section 2.2 and 3.3.1 are within the San Joaquin Valley Air Basin, managed by the San Joaquin Valley Air Pollution Control District. Air quality in the southern San Joaquin Valley is generally poor with respect to ozone and particulate matter and there are numerous days (40-100) each year when State ozone and particulate matter standards are exceeded (1999 California Air Quality and Emissions Almanac).

### **3.6.2. Environmental Consequences of the Proposed Action**

There are no construction activities or use of construction machinery included in the Proposed Action. The KCWA groundwater pumps that would be used for actions associated with the Proposed Action are electric, so their use would not affect air quality in the area. Water levels in San Luis Reservoir and O'Neill Forebay would remain within the range of normal operating conditions, therefore, any minor water level changes that might result from the Proposed Action would not change the potential for windblown

dust problems that might change air quality. The Proposed Action would cause the SWP to consume a relatively small amount of energy during the delivery of pump-in water and/or during the delivery of exchanged water. However, the Proposed Action changes only the timing of water delivery to the SWP (see 3.3), and would not change overall SWP pumping, power use, or related power-use emissions. Therefore, air quality conditions would not change from existing conditions. The effect of the Proposed Action on air quality would be less-than-significant.

### **3.6.3. Environmental Consequences of the No Action**

Under the No Action alternative, there would be no use of construction machinery, no pumping of banked water, and no changes in SWP operations or in water storage activities in San Luis Reservoir and O'Neill Forebay. Therefore, the No Action alternative would have no effect on air quality.

## **3.7. Aesthetics and Recreation**

### **3.7.1. Existing Conditions**

San Luis Reservoir and O'Neill Forebay accommodate activities such as swimming, boating, water-skiing, fishing, camping, and other day uses. The KCWA manages many groundwater recharge basins in Kern County (Figure 2). These recharge basins often contain water and provide opportunities for wildlife watching, particularly birds.

### **3.7.2. Environmental Consequences of the Proposed Action**

Under the Proposed Action alternative, minor water level fluctuations in San Luis Reservoir and O'Neill Forebay could occur during the delivery of KCWA's exchanged entitlement water, but levels would not change beyond normal operating conditions, therefore, the Proposed Action would have no effect on aesthetics or recreation in those locations. Pumping of 185,000 acre-feet of banked water from KCWA's groundwater banks would be well within normal annual operational parameters and would not affect recreation or aesthetics in Kern County.

### **3.7.3. Environmental Consequences of the No Action**

Under the No Action alternative, the recharge basins for the KCWA groundwater banks would not be affected. Additionally, operations of San Luis Reservoir and O'Neill Forebay would not be affected, therefore, no impacts to recreation or aesthetics would occur.

## **3.8. Agriculture and Socio-economics**

### **3.8.1. Existing Conditions**

KCWA is a wholesale distributor of water to water districts within Kern County. In 2000, Kern County agriculture comprised over 850,000 acres and a total value of over \$2 billion. The predominant commodities were fruits and nuts (254,213 acres, \$1,082,175,000), field crops and rangeland (515,705 acres, \$415,053,000), and vegetable

crops (91,480 acres, \$334,186,100) (Data from Kern County Farm Bureau: [www.kerncfb.com](http://www.kerncfb.com)). The SWP provides a significant amount of water to KCWA to satisfy the local water demands generated by this high level of agricultural production. KCWA also manages some water for industrial, municipal, and domestic uses.

### **3.8.2. Environmental Consequences of the Proposed Action**

Under the Proposed Action alternative, SWP and CVP water deliveries to Kern County water users would remain at current levels, and these deliveries would continue to comply with all existing environmental regulations. The Proposed Action involves purchasing banked water only. Therefore, the amount and/or timing of SWP water delivered to, or stored for, water users within KCWA's service area would not significantly change. The Proposed Action would not diminish water supplied to KCWA's service area or available to KCWA water users.

The storage and delivery of water to the EWA is subject to the water rights and needs of users within their service area, as required under the EWA Operating Principles (CALFED ROD, Attachment 2). KCWA and the Lead Agencies will structure the proposed water purchase agreement to insure that the water rights and water needs of local KCWA water users are met before EWA water is guaranteed to the Lead Agencies. Therefore, the capacity of groundwater supply for water users within KCWA's service areas would not be changed by implementation of the Proposed Action. KCWA would continue to operate and perform in a manner that is consistent with its service area's normal historical irrigation practices. Therefore, the Proposed Action alternative would have a less-than-significant effect on agriculture and socio-economics.

### **3.8.3. Environmental Consequences of the No Action**

The No Action alternative would not affect KCWA's operation, or have any impact on the KCWA service area's historic irrigation practices. Water deliveries from the CVP and SWP would not be affected. The No Action alternative, therefore, would have no effect on agriculture and socio-economics.

## **3.9. Geology and Soil**

### **3.9.1. Existing Conditions**

San Luis Reservoir and O'Neill Forebay are not lined and are subject to wave erosion. The geologic and soil conditions surrounding KCWA's water banks have been extensively sampled and are currently monitored as a part of the comprehensive groundwater management plan in place for KCWA's groundwater banking program. Geology and soil conditions in Kern County were discussed in the Kern Water Bank EIR (California Department of Water Resources 1986).

### **3.9.2. Environmental Consequences of the Proposed Action**

Under the Proposed Action, there would be no construction or significant changes in water levels in San Luis Reservoir that might cause seismic hazards or increased levels of wave erosion. Use of KCWA's groundwater banks would also remain within standard



operational parameters, therefore all impacts on geology and soils as a result of the Proposed Action alternative would be less-than-significant.

### **3.9.3. Environmental Consequences of the No Action**

The No Action alternative would not affect standard operational water level fluctuations in San Luis Reservoir and O'Neill Forebay, and it would not affect ongoing SWP, CVP, and EWA implementation. KCWA's water banks would not pump water for sale to the Lead Agencies. KCWA would operate in a normal manner with extraction and recharge operations taking place within operational and regulatory guidelines. The No Action alternative would have no effect on geology or soils.

## **3.10. Surface Water**

### **3.10.1. Existing Conditions**

See Sections 2.2 and 3.3 for a discussion of the existing surface water environment, which includes San Luis Reservoir, O'Neill Forebay, and the California Aqueduct.

### **3.10.2. Environmental Consequences of the Proposed Action**

Although the Proposed Action alternative would slightly alter CVP and SWP operations, levels in San Luis Reservoir and the California Aqueduct would remain within the range of normal operating conditions. The Proposed Action would only minimally affect the operating conditions of the California Aqueduct, San Luis Reservoir, and the SWP. There would be no increased risk of flooding because KCWA's flood control facilities, San Luis Reservoir, O'Neill Forebay, and the California Aqueduct would continue to maintain flood storage space for the duration of this water purchase agreement. The effect to surface water would be less-than-significant.

### **3.10.3 Environmental Consequences of the No Action**

Under the No Action alternative, operations at CVP and SWP facilities and KCWA's groundwater banks would continue under normal operating conditions. There would be no effects on surface water at any of these locations, consequently, this alternative would have no effect on surface water.

## **3.11. Ground Water**

### **3.11.1. Existing Conditions**

KCWA operates numerous groundwater banks in Kern County. The Kern Water Bank, Pioneer Groundwater Recharge and Recovery Project, Berrenda Mesa Project, and the Buena Vista Water Service District are all involved in the alternatives discussed. These KCWA groundwater banks possess approximately 1,449,000 acre-feet of stored water (Table 1). The KCWA groundwater banks are existing facilities whose purpose is to store water for later extraction. Typically recharge occurs during wet years or times of surplus while extraction occurs during dry years or periods of high demand. Kern County water users have developed an extensive series of groundwater storage and

recovery facilities. In 15 of the last 30 years, water shortages have required large amounts of groundwater pumping in the San Joaquin Valley portion of Kern County. The average amount of groundwater pumped during these periods is often between 500,000 to 1,000,000 acre-feet. See California Department of Water Resources (1986) for additional explanation of the existing operation of the Kern Water Bank and Pioneer Groundwater Recharge and Recovery Project.

### **3.11.2. Environmental Consequences of the Proposed Action**

Most of the banked groundwater that would be purchased under the Proposed Action alternative would likely be extracted by KCWA for use in lieu of SWP entitlement. Alternatively, KCWA could deliver the purchased water to the Lead Agencies via pump-in to the California Aqueduct. This Proposed Action would not cause significant adverse effects to groundwater resources because the groundwater levels in the KCWA groundwater banks after the proposed water purchase occurs would remain within the historic range of levels. Much of the 185,000 acre-feet of banked water that would potentially be retrieved by KCWA as part of the Proposed Action is surplus SWP water and Friant-Kern floodwater that was banked by KCWA in past years. There would not be subsidence effects because ground water levels would remain within their historic range. The KCWA is required to comply with the California Water Code and would avoid significant adverse effects to groundwater, including water quality (section 1732<sup>5</sup>). The overall effects of the Proposed Action on groundwater resources would be less-than-significant.

### **3.11.3. Environmental Consequences of the No Action**

Under the No Action alternative, KCWA would operate its groundwater banks in a normal manner guided by water demands and supplies in its service area during 2002. This alternative would have no effect on KCWA groundwater bank operation and no effect on any groundwater.

## **3.12. Water Quality**

### **3.12.1. Existing Conditions**

The quality of San Luis Reservoir, O'Neill Forebay, and SWP surface water is relatively good. The DWR monitors water quality to ensure that SWP water quality meets Department of Health Services drinking water standards and Article 19 Water Quality Objectives for long-term SWP contracts<sup>6</sup>. The objective of the SWP water-quality monitoring program is to maintain project water at an acceptable quality for recreation,

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<sup>5</sup> CA Water Code, Section 1732. The petitioner shall not initiate or increase the use of groundwater to replace surface water transferred pursuant to this article, except in compliance with Section 1745.10 and 1745.11.

<sup>6</sup> Article 19 Objectives are included as standard provisions in the DWR's water supply contracts. They require the collection and analysis of water quality samples in the SWP and the compilation of records. Article 19 (a) states: "It shall be the objective of the State and the State shall take all reasonable measures to make available, at all delivery structures for the delivery of Project water to the District, Project water of such quality that the following constituents do not exceed the concentrations stated." The constituents table is in Appendix D.

agriculture, and public water supply for the present and future under a policy of multiple uses of the facilities. These uses include fishing, boating, and water contact sports. The DWR analyzes the water for physical parameters such as water temperature, specific conductance, turbidity, and more than 60 different chemical constituents including inorganic chemicals, pesticides, and organic carbon potential. The monitoring program has stations throughout the SWP including the O'Neill Forebay and San Luis Reservoir, the California Aqueduct, and terminal reservoirs such as Silverwood Lake, Lake Perris, Pyramid Lake, and Castaic Lake.

The quality of water in KCWA's groundwater banks is relatively good, although it is subject to some alteration due to addition of dissolved particles while underground. Nevertheless, all groundwater banks operated by KCWA perform ongoing water quality testing and all deliveries of recovered water adhere to environmental tolerance limits pertaining to the intended use of the recovered water.

### **3.12.2. Environmental Consequences of the Proposed Project**

The EWA is responsible for avoiding water quality impacts as required under the EWA Operating Principles (CALFED August 28, 2000 ROD, Attachment 2). The quality of SWP surface water is relatively good. Groundwater from KCWA may be of lower quality than existing SWP surface water.

If KCWA's banked groundwater is used by the SWP in lieu of Delta water to fulfill entitlements, there could be a small effect to SWP water quality down-line of KCWA (south of Kern County). Any banked groundwater introduced into the California Aqueduct as part of the Proposed Action, however, shall be in accordance with the State's water quality criteria for introduction of non-project water into the California Aqueduct. The California Aqueduct routinely conveys 3-4 million acre-feet of water per year and the potential maximum of 185,000 acre-feet is a fraction of this quantity. Furthermore, as a part of standard operations, DWR monitor's water quality to ensure that SWP water quality continues to meet Department of Health Services drinking water standards and Article 19 Water Quality Objectives for long-term SWP contracts (Appendix D). KCWA would comply with the California Water Code when using banked groundwater in lieu of their SWP entitlement, or when pumping-in to the California Aqueduct. Based on these facts, the Proposed Action alternative would have a less-than-significant effect on water quality.

### **3.12.3. Environmental Consequences of the No Action**

Under the No Action alternative, CVP, SWP, and KWCA groundwater bank operations would not change. KCWA water would not be pumped-in to the California Aqueduct. The No Action alternative would have no effects on water quality.

## **3.13. Biological Resources - Fisheries**

### **3.13.1. Existing Conditions**

Many introduced species are prominent members of the biological community in the Sacramento-San Joaquin River Delta (Delta). Several native and special status fish

species such as Delta smelt, Sacramento splittail, Chinook salmon, and steelhead spend all or part of their lives in the Delta. Existing conditions for the Delta's fisheries and aquatic ecosystem are described in Chapter 6 and the Multi-Species Conservation Strategy technical appendix of the CALFED Programmatic EIR/EIS.

The fish found in San Luis Reservoir, O'Neill Forebay, and the California Aqueduct include largemouth bass, crappie, sunfish, striped bass, and bullhead catfish. Fish production in San Luis Reservoir and O'Neill Forebay is generally limited by variations in water levels during critical spawning periods, overall reservoir levels, and the availability of shallow near-shore rearing habitat.

### **3.13.2. Environmental Consequences of the Proposed Action**

The Proposed Action would not cause water levels in San Luis Reservoir, O'Neill Forebay, or the California Aqueduct to fluctuate beyond normal operating conditions (see 3.3). The Proposed Action would not cause SWP, CVP or EWA operation to change from the existing conditions. The delivery of water into O'Neill Forebay and/or San Luis Reservoir under the Proposed Action would be consistent with all State and Federal regulatory requirements, with the EWA Operating Principles, and with the terms and conditions of NMFS's Programmatic ESA Biological Opinion for the CALFED Bay-Delta Program. Therefore, the Proposed Action would not change fish habitat or environmental conditions of the Delta, San Luis Reservoir, O'Neill Forebay, or California Aqueduct from that occurring under the existing conditions. Therefore, the water purchase and delivery described in the Proposed Action would have no effect on special status fish, fish habitat, or fish populations.

### **3.13.3. Environmental Consequences of the No Action**

The No Action alternative would not affect SWP and CVP facilities or operations. It would also not affect any water in the State of California and would, therefore, have no effect on fish, fish habitat, or fish populations.

## **3.14. Biological Resources - Wildlife and Plants**

### **3.14.1. Existing Conditions**

Existing conditions of wildlife and plant communities are described in the Multi-Species Conservation Strategy technical appendix and Chapter 6 of the CALFED Programmatic EIR/EIS. Numerous special-status and sensitive plant and wildlife species occur in the locations of the proposed alternatives (see 2.2, 3.3 for locations). These species include San Joaquin antelope squirrel, giant kangaroo rat, San Joaquin kit fox, blunt-nosed leopard lizard, heartscale, and hispid bird's beak.

### **3.14.2. Environmental Consequences of the Proposed Action**

There are no construction activities included in the Proposed Action. The Proposed Action alternative would not disturb or cultivate any native untilled land, or directly affect wildlife, plants, or their habitats. Only existing SWP, CVP, and KCWA facilities would be used and facility operations would not change. In addition, the Proposed Action would comply with the USFWS Programmatic ESA Section 7 Biological Opinion

for the CALFED Bay-Delta Program, and other plans and policies in Section 1.2.3 of this EA/IS. Additionally, the Proposed Action would not affect any State or Federal special-status plant or animal species. The Proposed Action alternative would have no effect on wildlife or plant resources.

### **3.14.3. Environmental Consequences of the No Action**

The No Action alternative would involve no use of existing SWP, CVP, or KCWA facilities and would, therefore, have no effects on vegetation and wildlife.

## **4. OTHER REQUIRED ANALYSES**

### **4.1. Indian Trust Assets**

All Federal agencies have a responsibility to protect Indian Trust Assets as directed in Department of the Interior Manual, Part 512. Indian Trust Assets are legal interests in assets held in trust by the Federal government for American Indian tribes or individuals. Assets may be owned property, physical assets, intangible property rights, a lease, or the right to use resources, lands, or other things. Indian Trust Assets may be located both on and off Indian reservations and typically include lands, minerals, water rights, hunting and fishing rights, natural resources, money, and claims. Indian Trust Assets do not include properties in which a tribe or individual has no legal interest, such as certain off-reservation sacred lands. Indian Trust Assets cannot be sold, leased, alienated, or have their value reduced without approval from the United States through the Bureau of Indian Affairs.

#### **4.1.1. Analysis of the Proposed Action Alternative**

Under the Proposed Action alternative, there would be no construction or changes in water allocation that could potentially affect any Indian Trust Assets. As described in this document, only existing facilities would be utilized to recover and deliver the purchased water, and operations would remain within normal operational parameters, regulations, and approved guidelines. The Proposed Action alternative would, therefore, have no impact on Indian Trust Assets.

#### **4.1.2. Analysis of the No Action Alternative**

Under the No Action alternative, there would be no construction or changes in water allocation that could potentially affect Indian Trust Assets. The No Action alternative would, therefore, have no impact on Indian Trust Assets.

### **4.2. Environmental Justice**

The Federal requirement for environmental justice refers to the fair treatment of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Executive Order 12898, signed by President Clinton in 1994, requires Federal government agencies to consider the potential for their actions or policies to place disproportionately high adverse human health or environmental effects on minority and low-income populations. Potential

effects related to environmental justice would be effects that disproportionately affect minority and low-income populations.

Two State environmental justice statutes were enacted to address State coordination and consultation requirements. These statutes, SB 115 (Solis) and SB 89 (Escutia), parallel Federal mandates for environmental justice.

#### **4.2.1. Analysis of the Proposed Action Alternative**

The Proposed Action alternative would not disproportionately affect minority or low-income populations because KCWA and the Lead Agencies would structure the banked groundwater transfer agreement to insure that the demands of KCWA customers are met before water is guaranteed or delivered. This would ensure that users within KCWA's service area experience no water supply effects. In addition, KCWA banked groundwater sources and facilities would not be used to the extent that there would be environmental effects on rural agricultural populations. The SWP, CVP, EWA, and other related facilities and programs would continue to operate within their normal, historic parameters, regulations, and guidelines. The Proposed Action alternative would, therefore, have no effect on environmental justice requirements.

#### **4.2.2. Analysis of the No Action Alternative**

Under the No Action alternative, there would be no additional banked groundwater pumping at KCWA's groundwater banks beyond what would normally occur with respect to statewide and local hydrologic conditions and water demands. The SWP, CVP, EWA, and other related programs and facilities would continue to operate within their normal, historic parameters, regulations, and guidelines. There would be no effect on environmental justice requirements as a result of the No Action alternative.

### **5. CUMULATIVE EFFECTS**

#### **5.1. Introduction**

Cumulative effects result from the incremental impact of actions such as the two alternatives presented in this EA/IS, when they are added to other past, present, and reasonably foreseeable future actions, regardless of which agency or entity undertakes them. Cumulative effects can result from individually minor, but collectively significant actions taking place over time. CALFED actions, Central Valley Project Improvement Act (CVPIA) actions, and ongoing SWP and CVP operations and actions, in particular, are all highly adaptable as these programs adjust to the substantial changes in hydrologic, environmental, regulatory, and water supply conditions that annually occur throughout California.

#### **5.2. Other Related Projects**

The EWA Program for 2002 includes upstream acquisitions, stored water, and 2001 carryover surface supply. In addition to the EWA, DWR's Dry Year Program and the Critical Water Shortage Contingency Plan, the CALFED Environmental Water Program (EWP), and USBR's Central Valley Project Improvement Act (CVPIA) Level 4 Wildlife

Refuge Water Purchase Program may need to acquire north of the Delta water supply options during 2002. Implementation of the Sacramento Valley Water Management Agreement (Phase 8 of the water rights proceedings from the 1995 Water Quality Control Plan) may also include north of Delta water supply actions. These efforts, which are described briefly below, would need to be coordinated.

#### EWA 2001 Program

The EWA 2001 Program involved acquiring the basic assets as specified in the CALFED ROD. The DWR executed all water acquisitions during this first year without USBR involvement. This included a source shift agreement and purchases of banked water similar to the Proposed Action alternative both north and south of the Delta. Only 50,000 acre-feet of source shift was exercised as a result of projected San Luis low-point, available EWA assets, lack of EWA funds, and general concern about the value of this asset under given conditions. A scientific panel convened in October 2001 to critically review the EWA 2001 Program and concluded that assets were acquired successfully and the EWA Team made reasonably good decisions in a timely manner (see web site for Science Panel review report

[http://calfed.water.ca.gov/adobe\\_pdf/EWAReview\\_Final.pdf](http://calfed.water.ca.gov/adobe_pdf/EWAReview_Final.pdf)). The panel recommended expanding the program, increasing staffing for the program, synthesizing the data, and documenting decision rationale while retaining flexibility for decision-makers in the program. Because 2001 was the first year of operation of EWA, analyses of potential long-term beneficial environmental effects are difficult to perform due to a lack of sufficient data, but all indications are that no significant negative environmental effects occurred during 2001.

#### Dry Year Program

In 2001, DWR's Dry Year Program acquired approximately 138,800 acre-feet of water. DWR initiated the 2002 Dry Year Program in November 2001. DWR is negotiating water supply options that could be exercised by March 2002 if this is a dry year. The Program will also allow agencies that sign up and pay deposits prior to the end of March 2002 to participate in direct purchases of water provided by willing sellers and brokered through DWR. The program is open to all agencies and is intended to reduce the possibility of adverse economic impacts and hardship associated with water shortages. The quantity of water to be acquired is unknown and will depend on proposals made by participants, if any, and what options are exercised in their contracts.

#### Critical Water Shortage Contingency Plan

DWR is preparing a Critical Water Shortage Contingency Plan in response to the commitment in the CALFED ROD that California's Governor would convene a panel to develop a "contingency plan to reduce the impacts of critical water shortages primarily for agricultural and urban water users." The plan identified all available resources (e.g., water transfers, water exchanges, groundwater programs, local partnerships), building upon the experience gained with the Governor's Drought Water Bank, to minimize such shortages. The plan also recommended appropriate funding mechanisms.

DWR received \$10.5 million in the current fiscal year to implement programs recommended by the Panel: financial assistance to local agencies for preparing AB 303 plans and integrated water management plans, technical assistance for small water systems and rural homeowners with private wells, new groundwater data collection, and

preparation of a programmatic EIR for a critical water shortage purchasing program. DWR is proceeding with these activities, as well as with an outreach program as recommended by the Panel.

#### CALFED Environmental Water Program

The CALFED EWP is a water acquisition program with the goal to acquire water from willing sellers to augment instream flows in tributary streams of the Sacramento and San Joaquin River systems. The EWP intends to initiate pilot water acquisition projects in up to three tributary watersheds in 2002. The pilot water acquisition projects will serve to provide important information, including biological, hydrological, and economic factors, and the monitoring and tracking of benefits and water. This information will be used in developing and implementing a long-term plan for the EWP. How much water would be acquired and in what watersheds is unknown at this time; however, the EWA will coordinate with the EWP when such information becomes available.

#### CVPIA Level 4 Wildlife Refuge Water Purchase Program

In 2002, USBR will acquire incremental Level 4 Refuge water supplies to meet CVPIA requirements under 3406 (b)(2). Up to 96,000 acre-feet will be acquired to meet optimum refuge management needs for the 2002 Contract Year (March 2001 through February 2002). The actual amount of water to be acquired will be dependent on refuge needs and funding availability. The USBR is also involved in management and/or acquisition of spring and fall water flows of up to 184,000 acre-feet in support of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan.

#### Sacramento Valley Water Management Agreement

This agreement signed in 2001 is a collaborative effort to increase water supplies to farms, cities and the environment. It is being implemented in lieu of proceeding with Phase 8 of the State Water Resources Control Board's water right process for the Bay-Delta. Implementation may include coordinated use of storage facilities, conjunctive management of surface water and groundwater, management and recovery of tailwater through major drains, water conservation, and transfers and exchanges. A long-term workplan for water management projects will be completed by May 2002.

#### Other Water Transfers

Other water transfers between currently unknown and unidentified parties also may be proposed and undertaken in 2002. The number and volume of water transfers in 2002 is to a great degree, dependent upon statewide precipitation patterns and hydrologic conditions. In addition, prospective water transfer parties generally refuse to disclose potential agreements since premature disclosure could hinder or terminate their negotiations. Therefore, DWR and USBR cannot speculate what other transfers may occur

### **5.3. Cumulative Effects of Proposed Action and other Related Projects**

Ongoing operations of KCWA, SWP, CVP, and water contractors are complex and part of the affected environment. Both SWP and CVP are intricate networks of reservoirs and delivery systems. KCWA also operates a complex system of water conveyance and banking facilities to distribute water to local users and into the California Aqueduct. Management decisions to provide water for water contractors requires balancing water



for irrigation and domestic water supplies, fish and wildlife protection, restoration and mitigation, power generation, and meeting other water related standards. In developing and implementing operating decisions, both KCWA and the Lead Agencies use criteria related to reservoir operations and storage, prevailing water rights, and environmental requirements, flood control requirements, carryover storage objectives, reservoir recreation, power production capabilities, cold water reserves, pumping costs, contract requirements, and other factors. The possibility of using multiple water sources to meet these varied requirements and environmental opportunities adds flexibility to project operations and complexity to operating decisions.

The EWA is expected to make relatively small changes in the overall operations of the SWP and CVP facilities. Operational changes in water-year 2002 will include shifts in pumping rates at the CVP and SWP Delta diversion pumps, shifts in the storage and release patterns at SWP and CVP reservoirs, shifts in groundwater pumping and storage patterns within the KCWA, and shifts in surface water storage release patterns among local and regional agencies. Certain operations related to EWA variable assets will be affected by precipitation. In wet and normal years, surface water will be the primary EWA asset and in dry years, groundwater will become the primary EWA asset and operations will shift accordingly.

The EWA will allow curtailment and flexible operation of Tracy and Banks pumping to reduce entrainment of fish at the pumping plants, and will achieve benefits beyond the existing CALFED environmental baseline. In order to move water controlled by the EWA, pumping could increase when substantial impacts to sensitive fish are not likely. The final pumping pattern, however, will remain within the parameters the SWP is allowed under the existing SWRCB D-1641.

San Luis Reservoir storage will drop in response to EWA Delta export reductions, and if the EWA delivers water out of San Luis Reservoir to repay debt from previous borrowing arrangements or to store water in groundwater banks. San Luis Reservoir storage will increase in response to higher Delta exports on behalf of the EWA, or due to voluntary shifts in delivery patterns, water purchases in the export area, exchanges, or source shifts. However, San Luis storage patterns will range within the patterns that the CVP and SWP already allow under existing operating conditions.

The nature of the EWA Program, specifically, annual acquisition of up to 185,000 acre-feet of water from various sources, all of them willing providers, along with the regulatory framework currently in place, makes the potential for significant adverse cumulative impacts over the life of the EWA highly unlikely. Impacts are particularly unlikely for above normal water years. However, future EWA purchases in addition to drought management actions undertaken in below normal water years will need to be carefully managed to ensure future cumulative effects do not occur. These future actions will be discussed in the CEQA/NEPA document being prepared for the EWA. The EWA is being implemented and will be adaptively managed to actually maintain and/or benefit both Delta fisheries and CVP and SWP contractor water supplies. The goals of many of these related programs and projects are similar, and there are no significant cumulative effects identified from any of the proposed projects.

The Proposed Action Alternative of a water purchase from KCWA would lead to groundwater pumping in Kern County in 2002. KCWA would continue recharge and recovery of groundwater in subsequent years depending upon conditions. This action would provide water to be delivered to the EWA. This would help enable EWA to operate as specified in the CALFED ROD and EWA Operating Principles Agreement. Under the Proposed Action alternative, there would be no effects/impacts to SWP, CVP, or other related water facilities and programs, and these facilities would continue their normal planned operations in 2002 and beyond. The EWA would continue 2002 operations in a similar manner as 2001 (see Appendix A). The Proposed Action, therefore, would have no cumulative adverse effects on the environment.

#### **5.4. Cumulative Effects of the No Action and other Related Projects**

Under the No Action alternative, there would be no pumping of water purchased by the Lead Agencies from KCWA's groundwater banks in 2002. SWP, CVP, EWA and related facilities and programs would not be affected, and would continue planned operations in 2002. No cumulative effects would be realized. These facts and the specific analysis of individual environmental resources indicated that the No Action alternative would not have any effects on the environment.

### **6. MANDATORY FINDINGS OF SIGNIFICANCE**

#### **6.1. Proposed Action**

As the analyses and discussions in Chapter 3 indicate, the Proposed Action alternative would not have the potential to substantially or significantly degrade the quality of the environment. The Proposed Action alternative would be conducted entirely within existing SWP/CVP operations in the State of California. No new structures would be constructed. It would not eliminate important remnants of California history. Additionally, it would not contribute to significant cumulative environmental effects. No direct or indirect impacts to the human environment or biological resources are anticipated if the Proposed Action alternative is implemented.

##### **6.1.1. Mitigation Measures For Any Significant Effects**

As described in 6.1, there would be no effects on environmental resources or existing features of the human environment. Consequently, no mitigation measures would be necessary or proposed under the Proposed Action alternative to reduce effects to a level of non-significance.

#### **6.2.No Action**

Under the No Action alternative, there would be no pumping from KCWA's groundwater banks in 2002 for sale to the Lead Agencies. SWP, CVP, and related facilities and programs would not be used or affected. No cumulative effects would be incurred from the No Action Alternative. These facts and the specific analysis of the individual environmental resources indicate that the No Action alternative would not have any effects on the environment.

### 6.2.1. Mitigation Measures for Any Significant Effects

As discussed in 6.2, the No Action alternative would cause no significant adverse effects on any environmental resources or existing features of the human environment. Consequently, there were no mitigation measures proposed or required under the No Action alternative.

## 7. LIST OF AGENCIES AND PERSONS CONSULTED (CONSULTATION AND COORDINATION)

This draft EA/IS was prepared in consultation and coordination with applicable CEQA and NEPA requirements. The following agencies, organizations, and persons were consulted or involved in the EA/IS process:

Agency or Organization	Name
California Department of Fish and Game	Jim White
California Department of Water Resources	Curtis Spencer (retired)
CALFED Bay Delta Program	Dave Fullerton
Kern County Water Agency	Gary Bucher
National Marine Fisheries Service	Bruce Oppenheim
US Bureau of Reclamation	Frank Michney
US Fish and Wildlife Service	Matt Vandenberg

Pursuant to 40 CFR 1502.19, this draft EA/IS will be circulated to Federal, State, and local agencies and members of the public who have jurisdiction by law with respect to potential effects of any alternative, and members of the public who have been involved in this proposed action.

## 8. PREPARERS

Pursuant to 40 CFR 1502.17, the names and qualifications of the people who were primarily responsible for preparing this EA/IS are presented here.

	CONTRIBUTION	QUALIFICATION	YEARS OF EXPERIENCE
Delores Brown, DWR Environmental Program Manager	Project Description Effects Analysis Cumulative Effects	BS Zoology	24
Jerry Ripperda, Senior Environmental Scientist, DWR	Project Description	MS Horticulture BA Botany	12
Hanspeter Walter, Environmental Scientist, DWR	Project Description Effects Analysis Technical Editing	MS Wildlife BS Forestry	5

David Robinson Program Manager, USBR	Project Description	MS Zoology BS Biology	23
Nina Bicknese Environmental Specialist, USBR	Project Description Alternatives NEPA compliance	MS Ecology BS Biology	20

## 9. REFERENCES

Bass, R. E., A. I. Herson, K. M. Bogdan. 1999. CEQA Deskbook. Solano Press Books: Point Arena, CA.

CALFED Bay-Delta Program. 2000. Final Programmatic Environmental Impact Statement/Environmental Impact Report. July 2000. Sacramento, CA.

CALFED Bay-Delta Program. 2000a. Programmatic Record of Decision. August 2000. Sacramento, CA.

CALFED Bay-Delta Program. 2000. Overview of Kern County's Potential to Develop an EWA Water Supply. August 28, 2000. Sacramento, CA.

CALFED Bay-Delta Program. 2000b. Environmental Water Account Operating Principles Agreement, Attachment 2 to Programmatic Record of Decision. August 2000. Sacramento, CA.

California Air Resources Board. 1999. California Air Quality and Emissions Almanac.

California Department of Water Resources. 1986. Final Environmental Impact Report for the Artificial Recharge, Storage and Overdraft Correction Program, Kern County, California (Kern Water Bank). Sacramento, CA.

California Department of Water Resources. 2001a. Management of the California State Water Project. Bulletin 132-99. Sacramento, CA.

California Department of Water Resources. 2001. Initial Study, Negative Declaration and Notice of Determination for the water purchase, storage and recovery agreement between Cawelo Water District and the California Department of Water Resources for the Environmental Water Account. Sacramento, CA.

California Department of Water Resources. 2001. Initial Study, Negative Declaration and Notice of Determination for the Water Purchase, Groundwater Storage, and Recovery Agreement between Rosedale Rio-Bravo Water Storage District and the California Department of Water Resources for the Environmental Water Account. Sacramento, CA.

California State Water Resources Control Board. 1995. Water quality control plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. Sacramento, CA.

Kern County Water Agency. 1996. Initial Study and Proposed Negative Declaration for the Pioneer Groundwater Recharge and Recovery Project.

National Marine Fisheries Service. 1993. Biological opinion for the operation of the Federal Central Valley Project and the California State Water Project. Long Beach, CA

U.S. Department of the Interior. 1999. Central Valley Project Improvement Act Final Programmatic Environmental Impact Statement. Sacramento, CA.

U.S. Fish and Wildlife Service. 1995. Formal Consultation and Conference on Effects of Long-Term Operation of the Central Valley Project and State Water Project of the Threatened Delta Smelt, Delta Critical Habitat, and Proposed Threatened Sacramento Splittail. March 6, 1995. Sacramento, CA.

## 10. APPENDIX A

### Overview of the Four-Year EWA Program

The EWA Program is a cooperative management program involving five agencies that have responsibility for implementing the EWA. The U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the California Department of Fish and Game (DFG), (collectively, Management Agencies), have primary responsibility for managing EWA assets and exercising their biological judgment to determine what SWP/CVP operational changes are beneficial to the Bay-Delta ecosystem and/or the long-term survival of fish species, including those listed under the State and Federal Endangered Species Acts. USBR and DWR (collectively the Project Agencies) will cooperate with the Management Agencies in administering the EWA, including banking, borrowing, transferring, selling, and arranging for the conveyance of EWA assets, and making the operational changes proposed by the Management Agencies.

The EWA focuses on resolving the fishery/water diversion conflict at the SWP/CVP Delta export pumps because, in recent years, these diversions have suffered the greatest fluctuations in water supply reliability due to conflicts with fishery needs. To accomplish this purpose, the EWA will incorporate environmentally beneficial changes to the operation of the SWP/CVP, at no uncompensated water cost to the SWP/CVP water users. The EWA is intended to provide sufficient protections, combined with the Ecosystem Restoration Program and the regulatory baseline, to address CALFED fishery protection and restoration/recovery needs. The “EWA assets” will be used to:

- 1) Augment streamflow and Delta outflow;
- 2) Modify exports to provide fishery benefits during critical life history stages; and
- 3) Replace SWP/CVP water supply interrupted by the changes to SWP/CVP operations.

These objectives will be met by scheduling the use of EWA assets in response to several biological indicators and life history needs of fish as explained below. The presence or absence of targeted fishery resources within the SWP affected streams depends on a number of environmental factors (e.g. photoperiod, Delta outflow, temperature, etc). Therefore, the period of greatest vulnerability to aquatic resources varies from year to year in the Delta. Coordination through the CALFED Operations<sup>7</sup> Group and the (b)(2) Implementation Team<sup>8</sup> will be conducted monthly to optimize fishery benefits of all environmental water. Using an adaptive management approach, use of EWA assets will be scheduled by the Management Agencies in coordination with the Project Agencies. Decisions designed to protect species such as chinook salmon, steelhead, Delta smelt, and splittail will be made based on real-time assessments of relative risk and benefit. The following operational scenario could be used for EWA and (b)(2) actions. It should be

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<sup>7</sup> CALFED Operations Group: The CALFED Ops group is charged with coordinating the operation of the water projects with requirements of the CALFED Framework Agreement, the December 15, 1994 Principles of Agreement for the Bay-Delta Estuary and the State Water Resources Control Board Water Right decision 1641. DWR, USBR, NMFS, USFWS, EPA, DFG and SWRCB staff comprise the Ops group.

<sup>8</sup> (b)(2) Implementation Team: The (b)(2) Implementation Team implements the Central Valley Project Improvement Act Section 3406 (b)(2) reallocating 800,000 acre-feet of water for environmental purposes. Representatives of the USBR, USFWS, NMFS, DFG and DWR serve on the team.

emphasized that the following example is highly provisional; actual actions will be based upon biological factors and hydrologic conditions. Starting in December, a number of upstream and Delta planned actions could be implemented.

The Management Agencies may initiate Delta pumping cutbacks when fish are in the vicinity of the Tracy and Banks export pumps. As the cutbacks occur, the Management Agencies will release EWA assets, or identify assets as collateral, to the Project Agencies. The Project Agencies will use the assets or loan project supplies to EWA to allow continued delivery of water supplies to SWP water contractors.

In January, EWA actions will focus on improving the survival of juvenile salmon emigrating through the Delta. Increased survival of juvenile salmon would be accomplished by curtailing project export pumping during critical periods to increase the amount of water available for juvenile salmon emigration. The timing and duration of pumping cutbacks would be determined by a combination of biological factors.

To ensure survival of sensitive fish species during February and March, EWA assets would be released or identified as collateral to allow the curtailment of pumping when fish densities are high near the CVP Tracy and SWP Banks export pumps. The anticipated amount of pumping curtailment for both months is about 100,000 acre-feet. In dry conditions, exports would not be as high and there may not be a need to curtail pumping by as much.

In April and May EWA assets would be released or identified as collateral along with b(2) assets to reduce exports before and after the VAMP<sup>9</sup> period. EWA assets may also be used to reduce the drawdown of San Luis Reservoir.

During June and July SWP water exports could be reduced to avoid high salvage of sensitive fish species, such as delta smelt and Sacramento splittail. EWA assets would then be released or identified as collateral to compensate for these export reductions. Other actions during EWA implementation may involve upstream water releases from reservoirs to improve instream flow conditions during periods of anadromous fish migration, spawning, egg incubation, rearing, and juvenile emigration.

Current regulatory baseline programs affecting SWP, CVP, and EWA operations include:

- 1) 1993 Winter-run Biological Opinion (NMFS)
- 2) 1995 Delta Water Quality Control Plan, State Water Resources Control Board (SWRCB)
- 3) 1995 Delta Smelt Biological Opinion (USFWS)
- 4) Management of the full 800,000 acre-feet of CVP Yield Pursuant to Section 3406(b)(2) (or (b)(2) Water) of the Central Valley Project Improvement Act (CVPIA)
- 5) Other environmental protections, including Level 2<sup>10</sup> refuge water supplies as required by the CVPIA

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<sup>9</sup> Vernalis Adaptive Management Program (VAMP).

<sup>10</sup> Level 2 – The 1989 and 1992 Refuge Water Supply Studies define Level 2 refuge water supplies as the average amount of water the refuges received between 1974 and 1983.

The EWA will not be used to meet any new regulatory requirements under the Federal Endangered Species Act and the California Endangered Species Act or other statutes.

Several processes can be used to acquire EWA assets and/or functional equivalent sources of SWP/CVP water supply to offset the effects of operational curtailments under the EWA program so that deliveries will not be affected.

## 1. Acquisition of Water for the EWA

### A. Purchases

The Project Agencies will use EWA funds to purchase EWA assets from willing sellers both north and south of the Delta. Purchases can include leases, options, long-term agreements, and any other property or contractual transaction that make alternative SWP/CVP supplies available south of the Delta or available for conveyance to south of the Delta. Purchases will also include the acquisition of storage space in groundwater basins to bank EWA assets. The Management Agencies will identify assets to replace water lost to the SWP/CVP due to operational curtailment, and to be pledged as collateral when the EWA borrows from the SWP/CVP. The Project Agencies will accept the asset if the collateral meets the agreed guidelines for borrowing. The release of the asset shall be in accordance with a schedule agreed to by both the Management Agencies and the Project Agencies. A tentative release schedule will accompany an identified asset. The Project Agencies will coordinate EWA water acquisition with Level 4<sup>11</sup> refuge water acquisitions to ensure that both of these priority acquisitions are accomplished each year.

### B. Delta Operations

SWP/CVP Delta operations will involve four mechanisms by which EWA water assets are acquired.

- i. Sharing of (b)(2) water and Ecosystem Restoration Program (ERP) water pumped by the SWP.

The SWP and the EWA will share, on a 50-50 basis, the lesser of:

- a) water released from storage or made available for upstream purposes under either CVPIA Section 3406(b)(2) or the Ecosystem Restoration Program (ERP) and arrives in the Delta with no further ERP or (b)(2) purposes to serve;
- b) water that exceeds the export capacity of the CVP Tracy pumping plant;
- c) water for which the SWP and EWA both have demand for south of the Delta; and
- d) water the SWP has capacity to pump.

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<sup>11</sup> Level 4 – Level 4 refuge water supplies are defined in the 1989 and 1992 Refuge Water Supply Studies as the amount of water for full development of the refuges based upon management goals developed in the 1980s.



ii. Joint Point<sup>12</sup>: SWP Wheeling of CVP and EWA water.

The SWP will use excess capacity at its Harvey O. Banks (Banks) Pumping Plant to pump water for both the CVP and the EWA, to be shared between them on a 50-50 basis. The CVP water could be either from storage or from its Delta water rights to divert unstored water. The EWA water could be either from non-SWP/CVP water acquired north of the Delta or stored or unstored water pumped under CVP or SWP water rights. If either the CVP or EWA is demand-limited<sup>13</sup>, the other's use of Joint Point will not count against its 50 percent share.

Use of excess capacity at Banks for the EWA and CVP will take precedence over all other non-SWP pumping, except for wheeling water to respond to facility outages and wheeling to supply CVP contractors for whom the SWP has traditionally wheeled CVP water. The relative priority of Level 4 refuge water is currently being determined.

iii. SWP Appropriation of Unregulated Flow.

The SWP may use its Delta diversion rights to pump water from the Delta for EWA purposes when the demand for SWP supplies is less than the available supply. The SWP diversion rights would be used in cases where Joint Point could also be used but where it would be preferable to create EWA assets south of the Delta to offset SWP rather than CVP losses to operational curtailments. As an adjunct to Joint Point, it would simply utilize SWP rather than CVP water rights to pump excess flows for the EWA's share. It would not affect the CVP's own share of excess SWP capacity.

iv. SWP/CVP Pumping made Possible by Regulatory Relaxation

(a) Relaxation of the Section 10 Constraint

The SWP is limited under Section 10 of the Rivers and Harbors Act<sup>14</sup>, pursuant to US Army Corps of Engineers (Corps) Public Notice 5829-A, to a three-day average rate of diversion of water into Clifton Court Forebay of 13,250 acre-feet per day. This is equal to an average, around the clock diversion rate of 6,680 cfs. This rate may be increased during winter months when the San Joaquin River flow is above 1,000 cfs.

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<sup>12</sup> The term joint point is used here to refer primarily to the use of the SWP point of diversion alone, and specifically, to the wheeling of EWA as well as CVP water.

<sup>13</sup> Demand-limited- A project is demand-limited if no contractors want any more water than they are currently receiving, and if available storage facilities and/or conveyance facilities are full.

<sup>14</sup> Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from the Army Corps of Engineers. Under Section 10, the Corps regulates projects or construction of structures that could interfere with navigation. A Department of the Army permit is needed to construct any structure on any navigable water of the United States, to excavate or deposit material in such waters, or to do any work affecting the course, location, condition, or physical capacity of such waters.

The Corps granted permission to the SWP to increase the base diversion rate by the equivalent of 500 cfs to an average of 7,180 cfs for the months of July through September, through 2002. This 500 cfs will be dedicated to pumping for the EWA.

(b) Relaxation of the Export/Inflow Ratio

Under D-1641<sup>15</sup>, and anticipated under the SWRCB order to be issued upon completion of the Bay-Delta water rights hearing, SWP/CVP exports are limited at different times of the year to a certain percentage of Delta inflow (usually 35 or 65 percent). This limitation is called the Export/Inflow, or E/I ratio. Both D-1641 and the 1995 Water Quality Control Plan, consistent with the 1994 Principles for Agreement (Bay-Delta Accord) allow for these ratios to be relaxed upon the meeting of certain requirements. Relaxation of the E/I ratio will be sought as appropriate and used to create EWA assets south of the Delta. By relaxing the E/I ratio, an annual average amount of 30,000 acre-feet could be exported for the EWA.

The decisions for implementation of EWA actions and use of the various EWA assets will be coordinated through the CALFED Operations Group. The Ops Group will be used to report regularly on the EWA's operations, to help resolve issues that may arise, and to communicate to stakeholders. In addition, staff for the Management and Project Agencies is developing protocols for use of EWA assets. The CALFED Science Program has convened a scientific panel that reviews the EWA operations on an annual basis. The Management Agencies and the Project Agencies will keep this panel informed on a monthly basis through the CALFED Ops Group reporting process.

2. Banking of EWA Assets

A. Generally

Banking is the storage of water for later use that otherwise would be used or lost in the present. Water can be banked and used within the same water year or carried over for use in a subsequent water year. Even though the acquisition of stored water does not convert a transitory asset into a durable asset, banking is included as an EWA transaction. Like the acquisition of assets, banking transactions must provide for access to and the release of the stored EWA assets to the SWP/CVP.

The provisions of the banking document generally will control priority of EWA assets in storage. Unless the Management Agencies and the Project Agencies make other arrangements, EWA assets will have a lower priority for storage in SWP/CVP

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<sup>15</sup> D-1641-The State Water Resources Control Board issued Decision 1641 on December 29, 1999. The order requires the Project Agencies maintain their respective outflow standards until November 30, 2001 or until the Board adopts a further decision during its water rights hearings. It is currently in litigation, but the project agencies continue to voluntarily comply with the standards.

reservoirs than SWP/CVP water and thus will spill first. SWP/CVP reservoirs are operated for SWP/CVP purposes such as flood control, downstream temperature control, minimum downstream flows for fish, meeting regulatory requirements, and providing contract water supply including contractor carryover water.

#### B. Banking in SWP/CVP Reservoirs

EWA assets may be stored or “banked” in SWP/CVP reservoirs upstream of the Delta as well as in San Luis Reservoir provided the SWP/CVP do not incur any additional adverse operational impacts. The Project and Management Agencies shall jointly establish reasonable and practical standards for determining when an EWA asset may be stored and when it would spill or be lost from upstream SWP/CVP storage.

Banking EWA water south of the Delta will be important because it creates highly reliable assets which are both durable and which may be released without Delta constraints being an issue.

#### C. Groundwater Banking

At times, the EWA may bank surface water within existing groundwater banks to prevent loss by spilling from SWP/CVP reservoirs.

#### D. Source-Shifting Agreements

The purpose of water banking is to have water available for use at a time other than its original availability. Source-shifting agreements fall under this functional definition of “banking”. Source-shifting agreements are executed with a water agency that is able, at certain times, to call on non-Delta water sources to temporarily create an asset for use by the EWA. In these cases, the water agency is agreeing to a reduction in deliveries so these assets can be used for EWA operational curtailments. Replacement of the source-shifted water occurs at a mutually agreed upon time with the water agency without any incremental impacts to the SWP/CVP.

The proposed source-shifting agreement with Metropolitan is an example of such a banking arrangement. Metropolitan will defer up to 200,000 acre-feet for use by the EWA, which will help provide assurance that SWP and CVP water deliveries and operations will not be adversely affected by EWA operations.

### 3. Borrowing

Borrowing agreements will allow the EWA to borrow water from the CVP and SWP for fish protection during a water year as long as the water can be repaid without affecting the current or following year’s allocations. Borrowing of SWP/CVP water, specifically water in San Luis Reservoir, is intended to enhance the effectiveness and use of EWA assets. SWP/CVP water in San Luis Reservoir may be borrowed to support an operational curtailment in lieu of immediately releasing an EWA asset when the borrowed water is not needed at that time to make SWP/CVP deliveries. Borrowing can only take place when the borrowed water would not create or exacerbate water quality

and supply problems associated with the San Luis low point, and it meets reasonable carryover storage objectives.

An appropriate EWA asset will be pledged to assure that, if the borrowed water is not otherwise made up, release of the pledged asset will not cause SWP/CVP deliveries to be affected by the borrowing transaction.

#### 4. Transfers Using Delta Conveyance

Transfers will be used to create assets south of the Delta from assets upstream of the Delta. They can also be used to make acquisitions south of the Delta suitable for release to SWP/CVP use, where a change in the legal place or purpose of use or point of diversion of the water is needed.

## **11. APPENDIX B**

### **Overview of 2002 Proposed Purchases**

Assets acquired for the EWA will vary from year to year depending on hydrologic and regulatory conditions, and are therefore not certain. The EWA will be in effect for the first four years of Stage 1<sup>16</sup> of the CALFED Bay-Delta Program. The Project Agencies will enter into one-year contracts with willing sellers, until such time that long-term contracts can be instituted. During 2001, the first year of EWA's operation, State funds and State facilities were used to create an operable EWA. During years two through four, both Federal and State actions will be required to maintain the EWA. Currently, an environmental impact statement/report is being prepared to evaluate the various alternatives of a long-term EWA Program.

The EWA will expire in 2004 unless the program is extended by written agreement between the Management Agencies and Project Agencies. As indicated in the EWA Operating Principles Agreement (Attachment 2 to the CALFED ROD), before EWA expires the Management Agencies and Project Agencies will assess the success of EWA operations and analyze the potential impacts of new facilities and expanded conveyance capacity. The Agencies will determine the appropriate size and composition of an EWA, as well as EWA's appropriate share of the benefits from new facilities, in the fifth and future years.

In 2002, the EWA expects to make relatively small changes in the overall operations of the SWP, the CVP, and certain local and regional water agencies. The CALFED Record of Decision called for purchases of approximately 185,000 acre-feet annually with the one-time purchase of 200,000 acre-feet for an operational reserve. In addition, the ROD called for the EWA agencies to contract for the right to 100,000 acre-feet of source shifting each year.

Total target EWA water acquisition from sources north and south of the Delta for 2002 is about 185,000 acre-feet. Upstream acquisitions could range from approximately 30,000 to 220,000 acre-feet depending upon hydrology. Purchases from the export area could range from 0 to 185,000 acre-feet depending upon hydrology. The EWA also has a carryover surface supply of 61,000 acre-feet from 2001.

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<sup>16</sup> Stage 1 implementation covers the first seven years of implementation of the CALFED 30-year program and builds the foundation for long-term actions. The Stage 1 actions to implement the Preferred Program Alternative are described in the Record of Decision. These actions are dependent upon subsequent project-specific environmental analyses as well as on subsequent review of financial and legislative proposals by the State and Federal executive branches, Congress and the State Legislature.

## 12. APPENDIX C

### Environmental Checklist Form

1. Project title: 2002 Water Purchase Agreement Between Kern County Water Agency, the California Department of Water Resources, and U.S. Bureau of Reclamation as part of the CALFED Bay-Delta Program's Environmental Water Account

2. Lead agency name and address:

California Department of Water Resources  
3251 "S" Street  
Sacramento, CA 95816

U.S. Bureau of Reclamation  
Mid Pacific Region  
2800 Cottage Way  
Sacramento, CA 95825-1898

3. Contact person and phone number:

California Department of Water Resources  
Delores Brown (916) 227-2407

U.S. Bureau of Reclamation  
David Robinson (916) 978-5050

4. Project location: Sacramento and San Joaquin Valley.

5. Project sponsor's name and address:

California Department of Water Resources  
3251 "S" Street  
Sacramento, CA 95816

U.S. Bureau of Reclamation  
Mid Pacific Region  
2800 Cottage Way  
Sacramento, CA 95825-1898

6. General plan designation: N/A

7. Zoning: N/A

8. Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)

The State and federal lead agencies, the California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (BOR), respectively, will purchase banked groundwater supplied by the Kern County Water Agency (KCWA) in 2002 upon completion of an agreement between the Lead Agencies and KCWA. Under the agreement, a maximum of 185,000 acre-feet could be delivered. The amount to be purchased is dependent upon KCWA's 2002 SWP allocation. The water will come from existing banked groundwater accounts managed by KCWA. The groundwater was banked by KCWA during periods when available supplies created a surplus. Recovery of the purchased groundwater will be by direct pump-in to the California Aqueduct and/or delivery into O'Neill Forebay through SWP entitlement exchange. Only existing infrastructure will be utilized and no new facilities will be constructed under this project.

KCWA will not receive more water in 2002 than its contractual entitlement as a result of this project nor increase its SWP delivery requests. The Lead Agencies and KCWA concur that the project will not alter the timing or amounts of SWP water available to other contractors, and should, in fact, facilitate more reliable operation of the SWP within existing environmental

constraints.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

See Environmental Assessment/Initial Study, Chapter 3

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

California Department of Fish and Game, State Water Resources Control Board

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Agriculture Resources		Air Quality
	Biological Resources		Cultural Resources		Geology /Soils
	Hazards & Hazardous Materials		Hydrology / Water Quality		Land Use / Planning
	Mineral Resources		Noise		Population / Housing
	Public Services		Recreation		Transportation/Traffic
	Utilities / Service Systems		Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

✓	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

*Dolores Brown*

Date

3/1/02

Signature

Date

#### EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
  - a) Earlier Analysis Used. Identify and state where they are available for review.
  - b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
  - c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
- 9) The explanation of each issue should identify:
  - a) the significance criteria or threshold, if any, used to evaluate each question; and
  - b) the mitigation measure identified, if any, to reduce the impact to less than significance

Issues:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS (See Section 3.7 for more details) -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				✓
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓
II. AGRICULTURE RESOURCES (See Section 3.8 for more details): In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
use, or a Williamson Act contract?				
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				✓
<b>III. AIR QUALITY</b> (See Section 3.6 for more details) -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				✓
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				✓
d) Expose sensitive receptors to substantial pollutant concentrations?				✓
e) Create objectionable odors affecting a substantial number of people?				✓
<b>IV. BIOLOGICAL RESOURCES</b> (See Sections 3.13 and 3.14 for more details)-- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				✓
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				✓
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				✓
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				✓
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓
V. CULTURAL RESOURCES (See Section 3.2 for more details) -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in ' 15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to ' 15064.5?				✓
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✓
d) Disturb any human remains, including those interred outside of formal cemeteries?				✓
VI. GEOLOGY AND SOILS (See Section 3.9 for more details)-- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				✓
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				✓
ii) Strong seismic ground shaking?				✓
iii) Seismic-related ground failure, including liquefaction?				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?				✓
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				✓
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				✓
<b>VII. HAZARDS AND HAZARDOUS MATERIALS</b> (See Section 3.2 for more details) - Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				✓
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				✓
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				✓
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
project area?				
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				✓
<b>VIII. HYDROLOGY AND WATER QUALITY</b> (See Section 3.12 for more details)-- Would the project:				
a) Violate any water quality standards or waste discharge requirements?				✓
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			✓	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				✓
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				✓
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				✓
f) Otherwise substantially degrade water quality?			✓	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h) Place within a 100-year flood hazard area structures which would impede or redirect flood				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
flows?				
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✓
j) Inundation by seiche, tsunami, or mudflow?				✓
IX. LAND USE AND PLANNING (See Section 3.2 for more details)- Would the project:				
a) Physically divide an established community?				✓
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				✓
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓
X. MINERAL RESOURCES (See Section 3.9 for more details) -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓
XI. NOISE (See Sections 3.2 for more details) - Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				✓
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				✓
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				✓
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓
<b>XII. POPULATION AND HOUSING</b> (See Sections 3.2 and 5.3 for more details)-- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓
<b>XIII. PUBLIC SERVICES</b> (See Section 3.2 for more details):				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				✓
Fire protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓
<b>XIV. RECREATION</b> (See Section 3.7 for more details) --				



	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓
<b>XV. TRANSPORTATION/TRAFFIC</b> (See Section 3.2 for more details)-- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				✓
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				✓
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
e) Result in inadequate emergency access?				✓
f) Result in inadequate parking capacity?				✓
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				✓
<b>XVI. UTILITIES AND SERVICE SYSTEMS</b> (See Section 3.2 for more details)- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental				✓

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
effects?				
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				✓
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				✓
g) Comply with federal, state, and local statutes and regulations related to solid waste?				✓
<b>XVII. MANDATORY FINDINGS OF SIGNIFICANCE</b> (See Sections 6.1 and 6.2 for more details) --				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				✓
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				✓
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				✓

### 13. APPENDIX D

#### Article 19 Objectives for Water Quality Parameters

Parameter	Units	Article 19 Objective		
		Monthly Average	10 Year Average	Maximum
Arsenic				0.05
Boron				0.6 <sup>17</sup>
Chloride	mg/L	110	55	
Hexavalent Chromium				0.05
Copper				3.0
Fluoride				1.5
Iron + Manganese				0.3
Lead				0.1
Selenium				0.05
Sodium	% <sup>18</sup>	50	40	
Total Dissolved Solids	mg/L	440	220	
Total Hardness as CaCO <sub>3</sub>	mg/L	180	110	
Zinc				15

<sup>17</sup> Monthly Average

<sup>18</sup> Percentage of cationic composition